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alarm SCADA function The capability of a supervisory system to accomplish a predefined action in response to an alarm condition. (SUB/PE) C37.1-1994

alarm sending (telephone switching systems) The extension of alarms from an office to another location.

(COM) 312-1977w

alarm signal A signal for attracting attention to some abnormal condition. *See also:* alarm.

(COM/PE/EDPG) [48], 622B-1988r

alarm summary printout (sequential events recording systems) The recording of all inputs currently in the alarm state.

(PE/EDPG) [5], [1]

alarm switch An auxiliary switch that actuates a signaling device upon the automatic opening of the circuit breaker with which it is associated. (IA/PSP) 1015-1997

alarm system (protective signaling) An assembly of equipment and devices arranged to signal the presence of a hazard requiring urgent attention. *See also:* protective signaling.

(EEC/PE) [119]

alarm, yellow *See:* yellow alarm.

albedo (photovoltaic power system) The reflecting power expressed as the ratio of light reflected from an object to the total amount falling on it. (AES) [41]

(2) (A) In astronomy (where the sizes of the objects/surfaces are extremely large in comparison to a wavelength), the ratio of the total radiation reflected (scattered) from an object to the total incident power. (B) In transport theory or particle scattering (where the size of the object is not extremely large), the ratio of the total scattering cross-section to the sum of the scattering and absorption cross-sections.

(AP/PROP) 211-1997

ALC *See:* automatic load (level) control. ^a

alert (1) To cause the terminal of the user to give some audible or visual indication that an error or some other event has occurred. When the standard output is directed to a terminal device, the method for alerting the terminal user is unspecified. When the standard output is not directed to a terminal device, the alert shall be accomplished by writing the (alert) character to standard output (unless the utility description indicates that the use of standard output produces undefined results in this case). (C/PA) 9945-2-1993

(2) A notification to be watchful that shall not be considered the same priority as an alarm. (PE/NP) 692-1997

alert level A probability value placed on equipment failure rates to identify when systems, trains, or components are not achieving their target availability or reliability values.

(PE/NP) 933-1999

alertness function A device or system that monitors the operator for signs of incapacitation, usually by requiring movement or response to take place within a prescribed period of time. (VT) 1475-1999

(alert) A character that in the output stream shall indicate that a terminal should alert its user via a visual or audible notification. The (alert) shall be the character designated by '\a' in the C-language binding. It is unspecified whether this character is the exact sequence transmitted to an output device by the system to accomplish the alert function.

(C/PA) 9945-2-1993

alert tone A non-power ringing tone, or combination of tones, used to request the telemetry interface unit (TIU) or customer premise equipment (CPE) to become active.

(AMR/SCC31) 1390-1995, 1390.2-1999, 1390.3-1999

alert tone code (1) A data byte, from the utility controller, that identifies which alert tone is to be used by the central office service unit (COSU).

(AMR/SCC31) 1390-1995, 1390.2-1999

(2) A data byte that identifies which alert tone is to be used by the central office service unit (COSU).

(SCC31) 1390.3-1999

Alford loop antenna A multi-element antenna having approximately equal amplitude currents that are in phase and uniformly distributed along each of its peripheral elements and

producing a substantially circular radiation pattern in its principal E-plane. *Note:* This antenna was originally developed as a four-element, horizontally polarized, UHF loop antenna.

(AP/AES/ANT/GCS) 145-1993, 172-1983w

Alfvén velocity (radio-wave propagation) The characteristic velocity of an Alfvén wave, given by:

$$V_a = H_0 \left[\frac{\mu}{\rho} \right]^{1/2}$$

where μ is the permeability, H_0 is the static magnetic field strength, and ρ is the mass density of the conducting fluid.

(AP/PROP) 211-1990s

Alfvén wave (radio-wave propagation) In a homogeneous magneto-ionic medium, the magneto-hydrodynamic wave that propagates in the direction of the static magnetic field, with associated electric and magnetic fields and fluid particle velocities oriented perpendicular to the direction of propagation. (AP/PROP) 211-1990s

algebraic coding function In hashing, a hash function that returns the result of evaluating some polynomial in which selected digits of the original key are used as coefficients. For example, in the function below, the first three digits of the original key are evaluated as a , b , and c , respectively, in the polynomial $a + bx + cx^2$ with $x = 14$.

Original key	Calculation	Hash value
964721	$9 + 6(14) + 4(14)^2 = 877$	877
864765	$8 + 6(14) + 4(14)^2 = 876$	876

(C) 610.5-1990w

algebraic language A programming language that permits the construction of statements resembling algebraic expressions, such as $Y = X + 5$. For example, NOMAD or FORTRAN. *See also:* algorithmic language; logic programming language; list processing language; functional language.

(C) 610.13-1993w, 610.12-1990

algebraic manipulation The processing of mathematical expressions without concern for the numeric values of the symbols that represent numbers. (C) 1084-1986w

algebraic sum The answer arrived at when adding two operands numerically. For example: $01102 + 01012 = 10112$. *Contrast:* logical sum. (C) 610.10-1994w

ALGOL (ALGOrithmic Language or ALGebraic Oriented Language) A high-order programming language suitable for expressing solutions to problems requiring numeric computations, algorithms, or mathematical formulas; its many elegant features and formal syntactic definition have inspired much research in programming language theory. *Note:* Jointly developed by the United States and European communities, ALGOL 60 was the first language standard to be adopted as an ISO standard. As of this writing, ALGOL 68 is the dialect accepted as the latest standard language. *See also:* extensible language; EULER; GLYPNIR; block-structured language.

(C) 610.13-1993w

ALGOL 58 A dialect of ALGOL developed as an IEEE standard language in 1958. (C) 610.13-1993w

ALGOL 60 A dialect of ALGOL that was the first version to be adopted as an ISO language standard for ALGOL. *See also:* EL1; MP; SIMULA. (C) 610.13-1993w

ALGOL 68 A dialect of ALGOL characterized by being the first instance of a complete formal definition language.

(C) 610.13-1993w

algorithm (general) A prescribed set of well-defined rules or processes for the solution of a problem in a finite number of steps; for example, a full statement of an arithmetic procedure for evaluating $\sin x$ to a stated precision. *See also:* heuristic.

(MIL/C) [2], [20], [85]

(2) (A) (software) (mathematics of computing) A finite set of well-defined rules for the solution of a problem in a finite number of steps; for example, a complete specification of a sequence of arithmetic operations for evaluating $\sin x$ to a given precision. (B) (software) Any sequence of operations for performing a specific task.

(C) 610.12-1990, 1084-1986

algorithm analysis (software) The examination of an algorithm to determine its correctness with respect to its intended use, to determine its operational characteristics, or to understand it more fully in order to modify, simplify, or improve it. *See also:* algorithm. (C/SE) 729-1983s

algorithmic language (1) (software) A programming language designed for expressing algorithms; for example, ALGOL. *See also:* logic programming language; functional language; list processing language; algebraic language. (C) 610.12-1990, 610.13-1993w

(2) **(test, measurement, and diagnostic equipment)** A language designed for expressing algorithms. (MIL) [2]

alias (1) (A) (software) An additional name for an item.

(B) **(software)** An alternate label. For example, a label and one or more aliases may be used to refer to the same data element or point in a computer program. *See also:* data; label; computer program; alternate name. (C/SE) 729-1983, 610.5-1990

(2) An alternate name for a directory object, provided by the use of one or more alias entries in the DIT. *Synonym:* alias name. (C/PA) 1328.2-1993w, 1224.2-1993w, 1327.2-1993w, 1326.2-1993w

(3) An alternate name for an IDEFIX model construct (class, responsibility, entity, or domain). (C/SE) 1320.2-1998

alias entry A Directory entry, of Object Class "alias," containing information used to provide an alternative name for an object. (C/PA) 1327.2-1993w, 1326.2-1993w, 1328.2-1993w, 1224.2-1993w

aliasing The visual misrepresentation that occurs when an image or model contains more detail than the display device's resolution can present. *Note:* A result of aliasing is jagged stairstepping of slanted lines. (C) 610.6-1991w

alias name In the shell command language, a word consisting solely of underscores, digits, and alphabets from the portable character set and any of the following characters:

! % , @

Implementations may allow other characters within alias names as an extension. *See also:* alias. (C/PA) 9945.2-1993

align (test, measurement, and diagnostic equipment) To adjust a circuit, equipment, or system so that its functions are properly synchronized or its relative positions properly oriented. For example, trimmers, padders, or variable inductances in tuned circuits are adjusted to give a desired response for fixed tuned equipment or to provide tracking for tunable equipment. (MIL) [2]

aligned A term that refers to the constraints placed on the address of the data; the address is constrained to be a multiple of the data format size. (C/MM) 1596.5-1993

aligned address This is an integer multiple of the data block size. The maximum data block size that can be transferred by an implementation under test (IUT) Master is the product of data width and data length. (C/BA) 896.4-1993w

aligned bundle (fiber optics) A bundle of optical fibers in which the relative spatial coordinates of each fiber are the same at the two ends of the bundle. *Note:* The term "coherent bundle" is often employed as a synonym, and should not be confused with phase coherence or spatial coherence. *Synonym:* coherent bundle. *See also:* fiber bundle. (Std100) 812-1984w

aligned-grid tube (or valve) A vacuum multigrid tube or valve in which at least two of the grids are aligned, one behind the other, so as to obtain a particular effect (canalizing an electron beam, suppressing noise, etc.). *See also:* electron tube. (ED) [45], [84]

alignment (1) (data transmission) In communication practice, alignment is the process of adjusting a plurality of components of a system for proper interrelationship. The term is applied especially to the adjustment of the tuned circuits of

an amplifier for desired frequency response, and the synchronization of the components of a system. (PE) 599-1985w

(2) **(inertial navigation equipment) (navigation aid terms)** The orientation of the measuring axes of the inertial components with respect to the coordinate system in which the equipment is used. *Note:* Inertial alignment refers to the result of either the process of bringing the measuring axis into a desired orientation or the computation of the angles between the measuring axis and the desired orientation with respect to the coordinate system in which the equipment is used. The initial alignment can be accomplished by the use of noninertial sensors. *See also:* gyrocompass alignment; transfer alignment. (AES/GCS) 172-1983w

(3) **(communication practice)** The process of adjusting a plurality of components of a system for proper interrelationship. *Note:* The term is applied especially to the adjustment of the tuned circuits of an amplifier for desired frequency response, and the synchronization of components of a system. *See also:* radio transmission. (PE) 599-1985w

(4) **(computers)** Pertaining to data that are stored beginning at certain machine-dependent boundaries. Such data is said to be "aligned," otherwise it is said to be "unaligned;" for example, a four-bit data item is aligned if it begins on a full-word boundary of eight-bit words. *Synonym:* boundary alignment. (C) 610.5-1990w

(5) The suitability of particular addresses for accessing particular types of data. For example, some processors require even addresses for accessing 16-bit data items. (C/BA) 1275-1994

(6) *See also:* input-axis misalignment. (AES/GYAC) 528-1994

alignment error (1) An error that occurs when a packet is not a multiple of eight bits. *Note:* It is only applicable to specific protocols. (C) 610.7-1995

(2) The deviation of the recovered clock from the ideal recovered clock embedded by the transmitter. The deviation from the ideal sampling point may be caused by static timing errors in the timing recovery circuit, internal jitter generated in the timing recovery circuit, and the inability to track exactly the jitter on the received data signal. (C/LM) 8802.5-1998

alignment jitter The jitter measured against the clock of the upstream adapter. This is not a type of jitter per se; rather, it is a way to measure jitter. When "zero transferred jitter" is specified, the jitter measured is alignment jitter. (LM/C) 802.5-1989s

alignment kit (test, measurement, and diagnostic equipment) A kit containing all the instruments or tools necessary for the alignment of electrical or mechanical components. (MIL) [2]

alignment tool (test, measurement, and diagnostic equipment) A small screwdriver, socket wrench, or special tool used for adjusting electronic, mechanical, or optical units, usually constructed of nonmagnetic materials. (MIL) [2]

alive (1) (electric systems) Electrically connected to a source of potential difference, or electrically charged so as to have a potential different from that of the ground. *Note:* The term "alive" is sometimes used in place of the term current-carrying, where the intent is clear to avoid repetitions of the longer term. *Synonym:* live. *See also:* energized; insulated. (T&D) C2.2-1960

(2) *See also:* energized. (T&D/PE) 524-1992r

alkaline cleaning (electroplating) Cleaning by means of alkaline solutions. *See also:* electroplating. (EEC/PE) [119]

alkaline storage battery A storage battery in which the electrolyte consists of an alkaline solution, usually potassium hydroxide. *See also:* battery. (EEC/PE) [119]

Allan deviation *See:* two-sample deviation.

Allan variance The average of the variance of adjacent pairs of elements in a contiguous time series of data versus the averaging time used to generate the elements. The term "Allan variance" is also used to refer to its square root versus aver-